

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Safety and Enforcement Division
Rail Crossings and Engineering Branch
Rail Crossings Safety Section

RESOLUTION SX-115
January 29, 2015

RESOLUTION

RESOLUTION SX-115 AUTHORIZING METRO GOLD LINE FOOTHILL EXTENSION CONSTRUCTION AUTHORITY, ON BEHALF OF LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY, AN EXEMPTION FROM SECTION 9.5 OF GENERAL ORDER 75-D, AND PERMISSION TO ADD SOUND DIRECTIONAL SHROUDS TO THE WARNING DEVICES AT THE FIRST STREET AND SANTA CLARA AVENUE GRADE CROSSING OF THE METRO GOLD LINE FOOTHILL EXTENSION LIGHT RAIL LINE IN THE CITY OF ARCADIA, LOS ANGELES COUNTY.

SUMMARY

By letter dated October 15, 2014, and pursuant to Section 13.1 of California Public Utilities Commission (Commission) General Order 75-D, the Metro Gold Line Foothill Extension Construction Authority, on behalf of the Los Angeles County Metropolitan Transportation Authority, requests an exemption from the requirements of Commission General Order 75-D Section 9.5, to modify the operation of, and add sound directional shrouds to the automatic highway-rail grade crossing warning device bells at First Street and Santa Clara Avenue grade crossing along the Metro Gold Line Foothill Extension light rail transit project Phase 2A alignment in the City of Arcadia, Los Angeles County.

Metro Gold Line Foothill Extension Construction Authority requests authorization to adjust the audible component of the warning device systems to silence the crossing warning bells after the gate arms reach the horizontal position. The crossing warning device lights will continue to function throughout the entire warning operating cycle.

In addition, Metro Gold Line Foothill Extension Construction Authority proposes to install sound directional shrouds on each warning device that will focus the bell sound at the immediate crossing location.

BACKGROUND

Phase 2A of the Metro Gold Line Foothill Extension project is an 11.5-mile light rail line extension that runs from the City of Pasadena to the City of Azusa. The eastern 3.5 miles of alignment consists of a shared corridor comprised of both freight and light rail tracks. The line will consist of 41 total crossings. Twenty-four of the crossings are grade-separated and the remaining 17 are at-grade motor vehicle or pedestrian crossings.

The Metro Gold Line Foothill Extension Construction Authority (Foothill Authority) is requesting the exemption at First Street and Santa Clara Avenue grade crossing in the City of Arcadia along the semi-exclusive right-of-way alignment. The exemption will mitigate the noise to adjacent residential neighborhoods. Single and multi-family residential areas are located in close proximity to the at-grade crossing.

The Los Angeles County Metropolitan Transportation Authority (Metro) plans to operate light rail vehicle (LRV) service seven days a week, with LRVs ultimately operating on 5-minute headways during peak periods. Metro service currently begins at 4:00 AM and ends at 2:00 AM daily with extended hours on weekends.

DISCUSSION

Community concerns regarding noise from the sounding of bells and other audible warning devices at grade crossings is not new. The issue has been previously addressed by the Commission and several light rail transit (LRT) agencies in California. The development and expansion of LRT systems has increased this concern and the Commission's Safety and Enforcement Division

(SED) Rail Crossings and Engineering Branch (RCEB) is working with California's LRT agencies to address the concern without degrading safety at grade crossings.

Continuous Sounding of Bells

Section 9.5 of Commission General Order (GO) 75-D states:

“Audible Warning Devices. Bells or other audible warning devices shall be included in all automatic warning device assemblies (except as provided in Section 10) and shall be operated in conjunction with the flashing light signals. See American Railway Engineering and maintenance of Way Associations *Communications and Signals Manual of Recommended Practice* for reference.”

The modification of the automatic crossing warning devices will sound the bells when triggered by approaching LRVs, while the gate arms move from vertical to horizontal position. The bells will stop sounding once the gate arms reach the horizontal position. When the gate arms are in the horizontal position, the operators of approaching LRVs will sound the onboard audible warning device in accordance with requirements of Commission GO 143-B Sections 3.04 and 7.09 and Metro's established rules and procedures.

Foothill Authority's request for this exemption is in accordance with guidelines found in industry standards promulgated by the Federal Highway Administration (FHWA) and the American Railway Engineering and Maintenance of Way Association (AREMA), and therefore consistent with the provisions of Section 9.5 of GO 75-D referencing that standard.

FHWA's Railroad-Highway Grade Crossing Handbook: Chapter IV (I) (9), page 110, states in part: “When gates are used, the bell may be silenced when the gate arms descend to within 10 degrees of the horizontal position. Silencing the bell when the train reaches the crossing or when the gates are down may be desired to accommodate residents of suburban areas.”

Part 3.1.15(E)(10) of the AREMA Communications and Signals Manual of Recommended Practices states: “Pedestrian bell or other audible warning device shall sound for the duration of the warning system activation, except when gates are being raised, unless otherwise determined by the Diagnostic Team or ordered by a public agency.”

The Commission has granted exemption to Metro from this Commission requirement in the past for a number of Pasadena Gold Line crossings. Foothill Authority and Metro state in their request that the exemption sought at the First Street and Santa Clara avenue crossing, for silencing the bells while the gates are in the horizontal positions, is a practical and reasonable approach for mitigating noise in the community, and that safety will not be compromised if the exemption is granted.

Directional Shroud

Foothill Authority will install a directional shroud on the audible warning devices at the crossing. The directional shroud is similar in design to that approved by the Commission for Metro's use on Phase 1 of the Gold Line, through Decision (D.) 05-02-032, dated February 24, 2005 and D.05-09-040 dated September 22, 2005.

The design authorized in D.05-02-032 and D.05-09-040 was for a half-round directional shroud design attached to Western-Cullen-Hayes bells on the warning devices. The design was thoroughly tested by Metro and witnessed by Commission staff to meet audible operational requirements of AREMA, the premier national industry organization providing recommended practices pertaining to the design, construction and maintenance of railway infrastructure. Additionally, during field implementation and testing, the directional shrouds provided a noticeable reduction in bell noise at residences near the at-grade crossings, while meeting the minimum AREMA sound level requirements of 75 dBA.

Foothill Authority will use the same directional shroud design with the Western-Cullen-Hayes model number 0777 electronic bell or approved equivalent, and meet the following requirements:

1. Conform with the guidelines of the AREMA Communications & Signals Manual of Recommended Practices, Part 3.2.61;
2. Each installed bell will meet sound level of 76 dBA +/- 1 dBA, as measured 10 feet from the face of the bell, unless ambient noise levels dictate otherwise; and
3. The ring rate shall not be less than 100 impulses per minute and no more than 150 impulses per minute.

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SED has reviewed and analyzed Foothill Authority's exemption request. SED recommends that the requested exemption from the requirements of Commission GO 75-D be granted with the following conditions:

- Metro shall not modify the number, type, and functionality of the Commission Standard warning devices at the crossing without prior Commission approval.
- The LRV operators shall sound an audible warning device when approaching the crossing, as currently required by Section 7.09 of GO 143-B.
- The SED Director may temporarily suspend the authority granted by this resolution during any investigation of LRV involved collisions, or near collisions, where SED staff believes the authority granted by this resolution may have been causal or contributory to the collisions, or near collisions.
- If SED determines that LRV involved collisions, or near collisions, at the crossing are caused as a result of the authority granted by this resolution, then the SED Director has the power to rescind the authority granted by this resolution.

SED will coordinate with Foothill Authority for testing of the modified audible warning systems and confirm compliance with applicable AREMA sound level requirements.

NOTICE

On December 24, 2014, the Foothill Authority request was published in the Commission's Daily Calendar.

COMMENTS

The draft Resolution of the SED in this matter was mailed in accordance with Section 311 of the Public Utilities Code and Rule 14.2 (c) of the Commission's Rules of Practice and Procedure. __ comments were received.

FINDINGS

1. Foothill Authority requests an exemption from the requirements of Commission GO 75-D Section 9.5, to silence the crossing warning device bells after the gate arms reach the horizontal position, at the First Street and Santa Clara (CPUC No. 084P-16.80) crossing of the Foothill Line Extension in the City of Arcadia, Los Angeles County.
2. Foothill Authority's request for this exemption is in accordance with guidelines found in industry standards promulgated by the AREMA and, therefore, consistent with the provisions of Section 9.5 of Commission GO 75-D referencing that standard.
3. Foothill Authority requests permission to install a directional shroud on the audible warning devices at the crossing. Directional shrouds will focus the bell sound at the immediate crossing location and mitigate noise to the surrounding community.
4. Foothill Authority will use the same directional shroud design with the Western-Cullen-Hayes model number 0777 electronic bell or approved equivalent, as was previously approved by the Commission for Metro's use on Phase 1 of the Gold Line through D.05-02-032, dated February 24, 2005, and D.05-09-040, dated September 22, 2005.
5. SED reviewed Foothill Authority's request for exemption and finds that the request is a practical and reasonable approach for mitigating noise in the communities and that safety will not be compromised.
6. SED will coordinate with Foothill Authority for testing of the modified audible warning systems and confirm compliance with applicable AREMA sound level requirements.
7. SED recommends that this resolution be adopted.

Therefore, IT IS ORDERED that:

1. Metro Gold Line Foothill Extension Construction Authority on behalf of the Los Angeles County Metropolitan Transportation Authority is granted exemption from Section 9.5 of General Order 75-D, to modify the crossing warning device

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bells to sound once activated by a light rail vehicle, until the gate arms reach the down (horizontal) position at the crossing of First Street and Santa Clara (CPUC No. 084P-16.80) in the City of Arcadia, Los Angeles County.

2. Metro Gold Line Foothill Extension Construction Authority is granted permission to install a directional shroud on the audible warning devices at the First Street and Santa Clara (CPUC No. 084P-16.80) crossing, similar in design to that previously approved by the California Public Utilities Commission for the Los Angeles County Metropolitan Transportation Authority's use on Phase 1 of the Gold Line through Decision (D.) 05-02-032, dated February 24, 2005 and D.05-09-040, dated September 22, 2005.
3. The crossing warning devices shall continue to operate for a minimum of 20 seconds prior to the arrival of a light rail vehicle reaching the crossing.
4. The gate arms must be in the fully down (horizontal) position prior to the arrival of a light rail vehicle at the crossing.
5. The crossing warning device bells shall continue to sound until the gate arms reach the horizontal position.
6. Metro Gold Line Foothill Extension Construction Authority shall notify the City of Arcadia and the California Public Utilities Commission's Rail Crossings and Engineering Branch when the modifications to the crossing warning devices are completed.
7. Metro Gold Line Foothill Extension Construction Authority shall coordinate with the California Public Utilities Commission's Rail Crossings and Engineering Branch (RCEB) for the testing of the audible warning devices and directional shrouds. RCEB shall witness testing and compliance with applicable American Railway Engineering and Maintenance-of-Way Association sound level requirements.
8. The California Public Utilities Commission's (Commission) Safety and Enforcement Division (SED) is delegated the power to rescind the authority granted by this resolution under the following conditions:

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- a. If the Los Angeles County Metropolitan Transportation Authority modifies the number, type, and functionality of the Commission standard warning devices at the crossing without prior Commission approval.
- b. If the light rail vehicle (LRV) operators do not sound an audible warning device when approaching the crossing, as required by Section 7.09 of General Order 143-B.
- c. SED is authorized to temporarily suspend the authority granted by this resolution subsequent to any collision, or near collision, while SED is investigating whether a causal link exists, pending the findings of that investigation, or if SED suspects that LRV involved collisions, or near collisions, at the crossing may have been caused by any of the authority granted by this resolution.
- d. If SED determines that LRVs involved in collisions, or near collisions, at the crossing have been caused by any of the authority granted by this resolution, the SED Director is authorized to suspend the authority granted by this resolution.

This resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed, and adopted by the Commission at its regularly scheduled meeting on January 29, 2015. The following Commissioners voted favorably thereon:

TIMOTHY SULLIVAN
Interim Executive Director